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EXAMINER

ROSARIO, DENNIS

ART UNIT PAPER NUMBER

2624

DATE MAILED: 10/17/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/902,227

Applicant(s)

HERSCH ET AL.

Examiner

Dennis Rosario

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on RCE 7/14/2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1,3-5,7,10,13,24-28 and 34-38 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,3-5,7,10,13,24-28 and 34-38 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 July 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_.

***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 7/14/2006 has been entered.

***Response to Amendment***

The amendment was received on 7/14/2006. Claims 1,3-5,7,10,13,24-28 and 34-38 are pending.

***Claim Objections***

2. Due to the amendment the objection to claims 21 and 37 is withdrawn. However, claim 37 is rejected under 35 USC 112, below.

***Claim Rejections - 35 USC § 101***

3. Due to the amendment the rejection of claims 39-43 are withdrawn under 35 USC 101.

4. Claims 24 and 36 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. Claims 1,24,34 and 36 are drawn to non-functional descriptive material. MPEP 2106.IV.B.1(a) (Nonfunctional Descriptive Material) states:

“Descriptive material that cannot exhibit any functional interrelationship with the way in which computing processes are performed does not constitute a statutory process, machine, manufacture or composition of matter and should be rejected under 35 U.S.C. 101.”

“Where certain types of descriptive material, such as music, art, photographs and mere arrangements or compilations of facts or data, are merely stored so as to be read or outputted by a computer without creating any functional interrelationship, either as part of the stored data or as part of the computing process performed by the computer, then such descriptive material alone does not impart functionality either to the data as so structured, or to the computer.”

“For example, music is commonly sold to consumers in the form of a compact disc. In such cases, the know compact disc acts as nothing more than a carrier for nonfunctional descriptive material. The purely nonfunctional descriptive material cannot alone provide the practical application for the manufacture.”

MPEP 2106.IV.B.1 (Nonstatutory Subject Matter) states:

“When nonfunctional descriptive material is recorded on some computer-readable medium, it is not statutory since no requisite functionality is present to satisfy the practical application requirement”.

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Claim 24 currently recites "A target image...comprising...image instances which differ from each other by an embedded microstructure which evolves over time, where from far away mainly a global image is visible and from nearby mainly the evolving microstructure is visible..." and claim 36 recites "...where from far away mainly a global image representing said rendered original color image is visible and from nearby mainly the evolving embedded microstructure is visible." There is no functional relationship imparted by this data to a computing device. Therefore, the claims are drawn to non-functional descriptive material which is non-statutory per se. The fact that the claim recites a computer readable medium does not provide the utility (i.e., practical application in the technological arts) required under 35 U.S.C. 101 for the manufacture.

***Claim Rejections - 35 USC § 112***

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 13,37 and 38 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 13 recites the limitation "the animated dither matrix space" in line 3. There is insufficient antecedent basis for this limitation in the claim. The limitation of "the animated dither matrix space" ought to be amended to "an animated dither matrix space."

Claim 13 is rejected for the same reasons as claim 5 of the office action of 3/9/2006 under 35 USC 112.

Claim 37, recites the limitation "the transmitted microstructure " in line 1. There is insufficient antecedent basis for this limitation in the claim.

Claim 38, recites the limitation "the dithered image " in line 4. There is insufficient antecedent basis for this limitation in the claim. The limitation of "the dithered image" ought to be amended to "a dithered image."

Due to the amendment, the rejection of claim 5,6,8,9,12 and 16 is withdrawn under 35 USC 112.

***Response to Arguments***

7. Applicant's arguments, see amendment Section D, paragraph 2, lines 2-4, with respect to "time" and "temporal evolution", filed 7/14/2006, with respect to the rejection of claim 1 under 102(b) as anticipated by Drinkwater et al. (US Patent 5,712,731 A1) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Gray, III et al. (US Patent 5,856,829 A1).

8. Applicant's arguments, see amendment Section E, 4<sup>th</sup> paragraph, with respect to "independent", filed 7/14/2006, with respect to 102(b) as anticipated by Miller (ACM article: The Motion Dynamics of Snakes and Worms) have been fully considered and are persuasive. Due to the cancellation of claim 14, the rejection of claim 14 and any respective dependent claims, 16, 17, 18 and 19, has been withdrawn.

9. Applicant's arguments, see amendment Section F, 3<sup>rd</sup> paragraph, filed 7/14/2006 have been fully considered but they are not persuasive and states:

**"Rice's...texture map elements...which are an integral part of the image...and are...completely different from the visual motive represented by our microstructure, which aims at forwarding an independent message..."**

The examiner respectfully disagrees since Rice teaches text map elements or “unrelated graphical components” in col. 3, lines 31,32 such as the letter A in fig. 5A with num. 42 that represents a “static scene” in col. 3, line 64 and col. 4, line 42 such as a “pond” in col. 3, line 65. Thus the letter A is interpreted as an unrelated graphical component or is independent since the letter A does not belong or is not inherent with a pond unless the letter was present on a sign near the pond that described the pond.

However, since claim 44 was canceled the rejection of claim 44 and any respective dependent claim are withdrawn.

10. Applicant’s arguments, see amendment Section G, 2<sup>nd</sup> paragraph, lines 5-7 with respect to “‘spatially evolving microstructure’ (see amended claim 1,(b))”, filed 7/14/2006, with respect to 102(e) as being anticipated by Chatterjee (US Patent 7,012,616 B1) have been fully considered and are persuasive. Therefore, the rejection of claims 1,20,34 and 36 has been withdrawn.

11. Applicant’s arguments, see amendment Section J, 1<sup>st</sup> paragraph with respect to “a time-dependent animation transformation” filed 7/14/2006, with respect to 103(a) as being unpatentable over Chatterjee in view of Ostomoukhov et al. (US Patent 5,422,742 A1) have been fully considered and are persuasive. However, since claim 20 was canceled the rejection of claim 20 and any respective dependent claim are withdrawn.

12. Applicant’s arguments, see amendment, Section K, 1<sup>st</sup> paragraph and 3<sup>rd</sup> paragraph with respect to “independent”, filed 7/14/2006, with respect to the rejection(s) of claim 24 under 103(a) as being unpatentable over Miller in view of Terasawa et al. (IEEE article: Rendering Objects with Small Elements Based on their Micro and Macro



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Structure) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Gray, III et al. (US Patent 5,856,829 A1).

13. Applicant's arguments, see amendment, Section L, 1<sup>st</sup> paragraph with respect to section D as discussed in paragraph 8, above, filed 7/14/2006, with respect to 103(a) as being unpatentable over Drinkwater et al. in view of McGrew (US Patent 6,535,638 B2) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Gray, III et al. (US Patent 5,856,829 A1).

***Claim Rejections - 35 USC § 102***

14. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

15. Claims 1,34,36 are rejected under 35 U.S.C. 102(b) as being anticipated by Gray, III et al. (US Patent 5,856,829 A).

Regarding claim 34, Gray, III et al. discloses

a) a computing system operable (the word “operable” is interpreted as intended use and the following limitation in section a) is not given weight) for electronically displaying a target image with an embedded microstructure evolving over time, said computing system comprising:

a1) a server computing system operable (the word “operable” is interpreted as intended use and the following limitation in section a1) is not given weight) for rendering said target image from an original image by synthesizing target image instances and comprising:

a11) a client computing system capable (the word “capable” is interpreted as intended use and the following limitation in section a11) is not given weight) of receiving the sequence of image instances from the server computing system and capable of displaying said sequence,

b) where a time-dependent animation transformation (fig. 3 ,num. 410, label: "Transform (rotate, scale, distort, etc.)" corresponds to the claimed animation transformation wherein the Transform is interpreted as a "time-critical task" in col. 6, line 18 and shown in fig. 5 as TIME SLOTS) which correspond to the claimed time-dependent) specifies how said embedded microstructure spatially evolves over the succession of displayed target image instances, where said embedded microstructure (as shown in fig. 2D,num. 270) represents at least one visual motive element selected from the set of text, logo, symbol (as shown in fig. 2D,num. 270 is a symbol of a star) and ornament, where visual motive elements represented by said embedded microstructure are independent of the original image content (since a star with a face is not inherent or does not naturally belong on the surface of a planet) and where synthesizing the target image instances from said original image comprises a halftoning operation (via a "dithering circuit" in col. 15, line 30).

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Claim 36 is rejected the same as claim 34. Thus, argument similar to that presented above for claim 34 is equally applicable to claims 36 except for the additional limitations of:

a) a computing system capable (the word “capable” is interpreted as intended use and the following limitation of claim 36, lines 1,2 is not given weight) of displaying a target image with an embedded microstructure spatially evolving over time, said computing system comprising:

a1) a server computing system (figs. 1A and 1B, numerals 120 and 130 or “a wireless broadcast receiver” in col. 18, lines 4,5)

and client computing and display system (figs. 1A and 1B, all the other numerals except numerals 120 and 130)

a11) where the client computing and display system receives (via a “request” in col. 16, line 60) from the server computing system as input data an original color image (or “native...data” in col. 18, lines 17,18), microstructure data (or “texturing data” in col. 18, lines 17,18) and microstructure evolution parameters (“binary-coded data” in col. 18, line 53 that is used for “real-time animation” in col. 18, lines 55,56) and

a12) where the client computing and display system renders said target image from said original color image by synthesizing target image instances with said embedded microstructure (as shown in fig. 2D) on the fly (or in “real-time” in col. 15, line 56).

Regarding claim 1, Gray, III et al. discloses a method for electronically displaying a target image with an animated microstructure, where the target image is made of a succession of target image instances which differ from each other by an embedded microstructure which evolves over time, the method comprising the steps of:

a) defining a two-dimensional original image (or “2-dimensional image” in col. 22, line 19);

b) defining a time-dependent geometric animation transformation (fig. 3 ,num. 410, label: “Transform (rotate, scale, distort, etc.)” corresponds to the claimed animation transformation wherein the Transform is interpreted as a “time-critical task” in col. 6, line 18 and shown in fig. 5 as TIME SLOTS) which correspond to the claimed time-dependent) between an original microstructure space (fig. 2D,num. 285) and a transformed microstructure space (as shown in fig. 2D, num. 270 that has been rotated relative to the image of fig. 2D,num. 280), said transformation specifying how said embedded microstructure spatially evolves in successively displayed target image instances; and

c) rendering from said two-dimensional original image (or “2-dimensional image” in col. 22, line 19) said succession of target image instances (or each “frame” in col. 15, line 6 of “animated images” in col. 15, line 60) comprising:

c1) said embedded microstructure evolving over time (as shown in fig. 5 as TIME SLOTS),

d) where said rendering step comprises:

d1) a mapping (as shown in fig. 2D,num. 275) of positions between target image instances and positions within said original microstructure space according to said time-dependent geometric animation transformation and

d2) a halftoning (via a "dithering circuit" in col. 15, line 30) of said two dimensional original image;

e) where the microstructure represents at least one visual motive element selected from the set of text, logo, symbol (as shown in fig. 2D,num. 270 is a symbol of a star) and ornament;

f) where visual motive elements represented by said microstructure are independent of the original image content (since a star with a face is not inherent or does not naturally belong on the surface of a planet);

g) where the target image instances represent simultaneously (as shown in one image as shown in fig. 2D) at a global level (fig. 2D,num. 210") the original two-dimensional image (as shown by the V,u coordinate system in fig. 2D) and at the microstructure level (fig. 2D, numerals 280 and 270) the independent visual motive elements represented by said microstructure.

Regarding claim 3, Gray, III et al. discloses the method of claim 1, where only a part of the original image is rendered with an animated microstructure (as shown in fig. 2D), that part being specified by an additional mask definition step (via an "opaque pattern" in col. 23, line 40).

Regarding claim 4, Gray, III et al. discloses the method of claim 1, where an additional step enables to specify (via "image-defining parameters" in col. 7, line 1) a

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set of basic colors (or "color...values" in col. 7, line 4) for rendering said target image instances.

Regarding claim 5, Gray, III et al. discloses the method of claim 4, where said two-dimensional original image is halftoned by dithering at least one of the basic colors with a dither matrix (or "dither matrix" in column 39, line 18) embedding the microstructure.

Claims 7 is rejected the same as claims 4 and 5. Thus, argument similar to that presented above for claims 4 and 5 is equally applicable to claim 7.

Regarding claim 10, Gray, III et al. discloses the method of claim 1, where the evolution of said embedded microstructure over time comprises a blending (via "averaging texture information" in col. 21, line 9) between two microstructure shapes (or "texel" in col. 20, line 61 that has an "area" in col. 20, line 60. Thus, the texel is interpreted to inherently have a shape since the texel "cover[s]" in col. 20, line 61 an area).

Regarding claim 13, Gray, III et al. discloses the method of claim 1, where the embedded microstructure is made more flexible (via a grid as shown in fig. 2B) by an additional warping transformation (any one of fig. 3, num. 410, label "(rotate, scale, distort, etc.)" ) mapping between a target image space containing the target image and the animated dither matrix space.

Claim 37 is rejected the same as claim 5. Thus, argument similar to that presented above for claim 5 is equally applicable to claim 37.

***Claim Rejections - 35 USC § 103***

16. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

17. Claim 35 is rejected under 35 U.S.C. 103(a) as being unpatentable over Gray, III et al. (US Patent 5,856,829 A) in view of Shimomura et al. (US Patent 6,526,580 B2).

Regarding claim 35, Gray, III et al. does not disclose claim 35, but teaches that the invention can be used with a "cable headend, a wireless broadcast receiver, a telephone modem, etc." in col. 18, lines 5,6. Thus, Gray, III et al. suggests to one of ordinary skill in the art that shows at least a wireless broadcast receiver that can be used with the invention.

Shimomura et al. shows a wire broadcast receiver in fig. 1 as suggested by Gray, III et al. and claim 35:

a) where a server computing system is a Web server (fig. 1,num. 150) and where the sequence of image instances (one of which is shown in the video screen of fig. 8) is displayed by a client computing system with a Web page (fig. 8).

It would have been obvious at the time the invention was made to one of ordinary skill in the art to modify Gray, III et al.'s teaching of the wireless broadcast receiver with Shimomura et al.'s teaching of fig. 1 is an effective method of distributing data to a plurality of devices.



18. Claim 38 is rejected under 35 U.S.C. 103(a) as being unpatentable over Gray, III et al. (US Patent 5,856,829 A) in view of Nakamura et al. (US Patent 6,603,576 B1).

Regarding claim 38, Gray, III et al. discloses the computing system of claim 36, where the microstructure evolution parameters also comprise:

a) a warping transformation (the results of which are shown in fig. 9,numerals 912 and 914 relative to fig. 9,num. 905) .

Gray, III et al.

b) where the clients and display system also receives (via a "download" in col. 18, line 17) from the server (or "a wireless broadcast receiver" in col. 18, lines 4,5) as input data ("texturing data" in col. 18, lines 17,18).

Gray, III et al. does not teach the remaining limitation, but does teach that the texturing data or "texture information" in col. 21, line 34 includes a "by-the-pixel dither bypass" in col. 21, line 37 function which is interpreted as a function that performs a dithering operation or not. Since Gray, III et al. does "not show" in col. 15, line 28 a dithering circuit, Gray, III et al. suggests to one of ordinary skill in the art to find a teaching that shows a dithering circuit.

Nakamura et al. shows a dithering circuit in fig. 1,num. 18 and in fig. 7 as suggested by Gray, III et al. and the remaining limitations of:

a) a mask (fig. 3B) whose values represent relative weights of the original color image and of the dithered image(or ".75" as shown in fig. 3B for the mask and .25 for the original image as shown in fig. 2), the mask defining the position (as indicated by

the grid of fig. 3B) and visibility (as shown in fig. 7,num. 34) of the microstructure (or squares of fig. 3B) within the target image (fig. 7,num. 34).

It would have been obvious at the time the invention was made to one of ordinary skill in the art to modify Gray, III et al.'s teaching of texture information that includes an operation of whether to dither on a pixel basis with Nakamura et al.'s teaching of dithering on a pixel basis that includes strength values that indicate whether or not the original image should be dithered, because Nakamura et al.'s teaching provides an "improved digital watermarking" in col. 1, line 67 thus protecting an image from piracy.

### ***Conclusion***

19. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dennis Rosario whose telephone number is (571) 272-7397. The examiner can normally be reached on 9-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bhavesh Mehta can be reached on (571) 272-7453. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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